REMARKS

I. Status of Application

By the present amendment, Applicant amends claims 1 and 16. Claims 1-20 are all the claims pending in the Application, with claims 1 and 16 being in independent form. Claims 1-20 have been rejected.

The present Amendment addresses each point of objection and rejection raised by the Examiner. Favorable reconsideration is respectfully requested.

II. Formalities

During the personal interview with the Examiner conducted on August 3, 2007, the Examiner conceded that the rejection under 35 U.S.C. §102(e) that is listed on page 3 of the 04/16/07 Office Action was included merely as a typographical error and that this error would be corrected in the next office action. Indeed, the Examiner explicitly acknowledged that Suzuki fails to disclose or suggest all the features of the claimed invention on page 4 of the 04/16/07 Office Action and, in doing so, acknowledges that a rejection under 35 U.S.C. §102 is improper. Therefore, Applicant respectfully requests correction of the aforementioned typographical error.

III. Claim Objections Under 35 U.S.C. §132(a)

The Examiner has objected to the Amendment filed on March 5, 2007 under 35 U.S.C. §132(a), alleging that it introduces new matter into the disclosure. The Examiner alleges that the recitation "an address component for dividing at least one of said plurality of subfields into M subfields..." as recited in claim 1, is not supported by the original disclosure. More particularly, the Examiner alleges that no aspect of the original disclosure recites or discloses that the subfields are further divided into subsubfields. Applicant respectfully disagrees.

Applicant submits that *at least* by FIGS. 4-5 and page 14, lines 6-12 of the original disclosure adequately support the claimed feature of further dividing subfields into subsubfields. For example, the header row of the table in FIG. 4 indicates that four different subfields (SF1, SF2, SF3, and SF4) are each divided into four subsubfields, respectively (e.g., subfield SF1 is further divided into four subsubfields, $SF1_1$, $SF1_2$, $SF1_3$ and $SF1_4$).

FIG. 5 shows another example of four different subfields (SF1, SF2, SF3, and SF4) that are each divided into four subsubfields, respectively. Moreover, page 14, lines 6-12 of the original specification explicitly states that "the subfields SF1 to SF4 are constituted by, respectively, four subfields of $SF1_1$ to $SF1_4$, $SF2_1$ to $SF2_4$, $SF3_1$ to $SF3_4$, $SF4_1$ to $SF4_4$ as shown in FIG. 5."

Therefore, Applicant submits that all of the amendments included with the Amendment filed on March 5, 2007 are fully supported by the original specification for *at least* the reasons discussed above.

V. Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 1-20 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent Publication No. 2003/0006994 to Suzuki (hereinafter "Suzuki") in view of U.S. Patent Publication No. 2002/005400 to Tokunaga et al. (hereinafter "Tokunaga"). Applicant respectfully traverses all of these rejections for *at least* the reasons set forth below.

In order for the Examiner to maintain a rejection under 35 U.S.C. §103, the cited references must teach or suggest all of the recitations of claims 1-20. Applicant respectfully submits that Suzuki, Tokunaga, and any combination thereof, fails to teach or suggest all of the recitations of claims 1-20.

A. Independent Claim 1

Independent claim 1 recites (among other things):

> ...a multi-grayscale component for deriving multi-grayscale pixel data by adding each different offset value to the pixel data corresponding to a display line group including [M · (k-1)+1]th display lines (where M is a natural number, and k is a natural number of n/M or smaller) of the display panel...

As a preliminary matter, Applicant respectfully submits that neither Suzuki, Tokunaga, nor any combination thereof, teaches or suggests the feature of "display line groups," as recited in claim 1. The grounds of rejection relies on Suzuki as allegedly teaching the feature of "display line groups" on page 9, paragraph 221, lines 23.57. Applicant respectfully disagrees and submits that Suzuki does not provide any teaching or suggestion whatsoever regarding the feature of "display line groups," as claimed.

Quite to the contrary, in FIGS. 15-20B, Suzuki merely shows various examples of a "dither matrix" in which dither coefficients are distributed in 4 × 4 pixel cells. Paragraph 0131, lines 3-5. Although FIG. 16 of Suzuki refers to each respective column by column numbers such as 4L, 4L-1, 4L-2, and 4L-3, and refers to each respective row by row numbers such as 4K, 4K-1, 4K-2, and 4K-3, Suzuki provides no teaching or suggestion whatsoever regarding the feature of "display line groups," as claimed. Indeed, the mere fact that Suzuki teaches that pixels are arranged in lines (e.g., rows 4K, 4K-1, 4K-2 and 4K-3), and teaches pixel groups of 4 rows and 4 columns, does not correspond to the broadest reasonable interpretation of the recitation "display line groups," as claimed. Therefore, Applicant submits that claim 1 is patentable over the cited references for *at least* these reasons.

Second, as set forth above, claim 1 requires the feature of "adding each different offset value to the pixel data corresponding to a display line group." As explained in the present specification with reference to an exemplary embodiment of the invention, the light offset data generation circuit 21, shown in FIG. 3, generates line offset data. And, as recited in claim 1, each different offset value is added to a respective display line group. By way of illustration, FIG. 7 shows the different offset values added to each respective display line group in the respective squares shown above the letters "LD." As shown in FIG. 7, the offset value "10" is added to the pixel data "PD" for all of the pixels in the "4N-3" display line group. Similarly, as shown in FIG. 7, the offset values "8", "6" and "4" are, respectively, added to the pixel data for the pixels in the display line groups "4N-2", "4N-1" and "4N." Therefore, according to the claimed invention, an offset value is uniformly added to the pixel data for the pixels in each of the display lines belonging to a "display line group" (i.e., one of "4N-3", "4N-2", "4N-1" and "4N."

In stark contrast to the recitations of claim 1, Suzuki teaches the generation and addition of dither coefficients whose values are not uniform for the pixels included in each display line. Specifically, FIGS. 16 and 17 of Suzuki teach a dither matrix table showing the way in which the dither coefficients generated by the first dither matrix circuit 354 are allocated to the respective pixel positions. *See* paragraph 0132 and FIG. 16. As described in paragraph 0131 of Suzuki, 3-bit dither coefficients are generated representing "0" to "7". Suzuki also describes in paragraphs 0132-0159 the values of the dither coefficients allotted to the 4 × 4 pixel cells for the first through the fourth fields. *See also* FIGS. 16 and 17. Moreover, Suzuki's dither coefficients are

added to the lowest three bits of the pixel data (error diffusion-processed pixel data ED) as described in paragraph 0211.

As shown above, Suzuki merely teaches the generation and addition of dither coefficients whose values are not uniform for the pixels included in each display line. As a result, Suzuki fails to teach, and cannot possibly suggest, the feature of adding a different offset value to each display line group, as recited in claim 1.

Third, independent claim 1 recites:

> ...a light emission sustaining component for weighting said display line groups with different brightness values, respectively.

As already explained above, Suzuki merely teaches the generation and addition of dither coefficients whose values are not uniform for the pixels included in each display line. Consequently, Suzuki fails to teach, and cannot possibly suggest, the feature of weighting display line groups with different brightness values, respectively, as claimed. Hence, Applicant submits that claim 1 is patentable over the cited references for *at least* these additional independent reasons.

Fourth, as discussed with the Examiner during the personal interview conducted on August 3, 2007, without conceding the merits of the Examiner's rejections and merely in an effort to expedite prosecution, Applicant has amended independent claim 1 to recite:

> ...an address component for dividing at least one of said plurality of subfields into M subsubfields, and in said subsubfields, respectively, performing~~, for the different display line groups,~~ a lighting mode setting or an extinction mode setting to each of the pixel cells for a different one of the display line groups, based on the multi-grayscale pixel data with

> respect to each of the pixel cells belonging to the corresponding display line group in said M subsubfields...

Applicant respectfully submits that neither Suzuki, Tokunaga, nor any combination thereof, teaches or suggests the above features. Claim 1 requires that the lighting mode setting or the extinction mode setting is performed for a different one of the display line groups in each of the M subsubfields. By way of illustration, with reference to an exemplary embodiment of the claimed invention, as shown in FIG. 4, a different one of the display line groups "4N-3", "4N-2", "4N-1" and "4N", is mode set (by erase addressing discharge) in each of the subsubfields $SF1_2$ to $SF4_4$, respectively.

By way of further illustration, with reference to another exemplary embodiment as shown in FIG. 6, a lighting mode setting or an extinction mode setting is respectively performed in the subsubfield, to each of the pixel cells for a different one of the display line groups. For example, in FIG. 6, the scan pulse SP is, in turn, applied to the row electrodes Y1, Y5, Y9 ... Y4n-3, in the addressing period W1 of the subsubfield $SF1_2$. Similarly, according to the exemplary embodiment shown in FIG. 6, the display line group is selectively address in each of the subsequent addressing periods W2, W3 and W4.

Fifth, the Examiner expressly acknowledges that Suzuki fails to teach or suggest an address component for dividing at least one of said plurality of subfields into M subsubfields, and performing, for the different display line groups, a lighting mode setting or an extinction mode setting based on the multi-grayscale pixel data with respect to each of the pixel cells belonging to the corresponding display line group in said M subsubfields and a light emission sustaining component for weighting said display line groups with different brightness values,

respectively. 04/16/07 Office Action, page 4. Nevertheless, the grounds of rejection rely on Tokunaga as allegedly teaching or suggesting this feature. Applicant respectfully disagrees.

Tokunaga teaches that the fourth cycle of one field period is divided into subfields SF4a – SF4g. However, as taught in Tokunaga, the addressing of the display lines (typically Y1 – Yn) shown in FIGS. 6A – 6G, sequentially selected by the scan pulse SP) is the same between the divided subfields SF4a - SF4g. Therefore, Tokunaga does not teach, and cannot possibly suggest, the feature of, in said subsubfields, respectively, performing a lighting mode setting or an extinction mode setting to each of the pixel cells for a different one of the display line groups, based on the multi-grayscale pixel data with respect to each of the pixel cells belonging to the corresponding display line group in said M subsubfields, as claimed.

Accordingly, Applicant submits that claim 1 is patentable over Suzuki, Tokunaga, and any combination thereof, for *at least* these reasons. Further, Applicant submits that the dependent claims 2-15 are patentable over the cited references *at least* by virtue of their dependency. As such, Applicant respectfully requests that the Examiner withdraw these rejections.

B. Independent Claim 16

Independent claim 16 recites (among other things):

> ...a multi-grayscale component for deriving multi-grayscale pixel data by adding each different offset value to the pixel data each corresponding to a display group including [M · (k-1) +1]th display lines (where M is a natural number and K is a natural number of n/M or smaller) of the display panel...

In view of the similarity between these requirements and the requirements discussed above with respect to independent claim 1, Applicant respectfully submits that arguments analogous to the foregoing arguments as to the patentability of independent claim 1 demonstrate the patentability of claim 16. In particular, neither Suzuki, Tokunaga, nor any combination thereof, teaches or suggests the feature of "display line groups," as claimed. Moreover, none of the cited references, nor any combination thereof, teaches or suggests the feature of adding a different offset value to a display line group, as further recited in claim 16

As such, it is respectfully submitted that claim 16 is patentably distinguishable over the cited references *at least* for reasons analogous to those presented above.

Additionally, without conceding the merits of the Examiner's rejections, and merely in an effort to expedite prosecution of this matter, Applicant has amended claim 16 to recite (among other things):

> ...a light emission driving component for emitting the pixel cells depending on the multi-grayscale pixel data by assigning a different weighting in intensity to each of the display line groups ~~each differently in luminance~~.

Applicant further submits that neither Suzuki, Tokunaga, nor any combination thereof, teaches or suggest the feature of assigning a different weighting in intensity to each of the display line groups, as claimed. Quite to the contrary, for *at least* the reasons already discussed above, Suzuki teaches the generation and addition of dither coefficients whose values are not uniform for the pixels included in each display line. Moreover, Tokunaga fails to remedy the deficient teachings of Suzuki. Therefore, Applicant submits that claim 16 is patentable over the cited references for *at least* these reasons. Further, Applicant submits that the dependent claims

17-20 are allowable *at least* by virtue of their dependency on claim 16. Thus, the allowance of these claims is respectfully solicited of the Examiner.

VI. Amendments to the Specification

Applicant hereby amends the present specification, as set forth above, to correct various typographical errors. These amendments are fully supported by the original specification and no new matter has been added.

VII. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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